PATENT SPECIFICATION (11) 1 589 512

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(21) Application Nos. 14743/76 (22) Filed 10 April 1976 (19)
22911/76 3 June 1976

(23) Complete Specification filed 5 July 1977

(44) Complete Specification published 13 May 1981

(51) INT. CL.³ A47B 88/00

(52) Index at acceptance
A4B 11 15A2 19

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(54) IMPROVEMENTS IN AND RELATING TO DRAWERS

(71) We, L. B. (PLASTICS) LIMITED, a British Company, of Firs Works, Nether Heage, Belper, Derbyshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to drawers and particularly to the fitting of attachments to drawers.

One form of currently available drawer is assembled from a series of interfitting components which can be despatched from the factory in a separated or "knock-down" condition and assembled by the purchaser to form a drawer. The drawer sides and back comprise hollow extruded wall panels which are connected to one another and to the drawer front by connecting pieces in the form of plastic mouldings having projections which engage in the ends of the hollow panels, the side walls having tracks formed in the outer faces thereof for sliding engagement with drawer runners mounted in the cabinet or like structure in which the drawer is supported.

It is often desired to fit various attachments such as stop members, catches or the like to drawers of this kind and hitherto this has presented somewhat of a problem and has generally been effected by self-tapping screws. Attachment in this manner is in some instances insecure and also involves and additional fitting operation which can be time consuming and inconvenient.

The present invention provides a drawer in which at least the back and side wall panels have openings in their ends and are connected to one another and to the remaining wall panel by respective connection pieces having projections engaged in said openings, and a fitting located with respect to one of said openings in one of said wall panels prior to assembly of the drawer and retained against removal by the engagement of one of said projections in an associated opening in one of said wall panels when the drawer is assembled. Preferably the fitment incorporates a portion which is trapped between said projection and the associated wall panel. The trapped portion of the fitment may be of thin metal construction. Alternatively the trapped portion of the fitment may be of thicker construction, a recess being formed in said projection and/or in the associated wall panel to accommodate the trapped portion.

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of one form of fitting for use as a drawer stop;

Fig. 2 is a fragmentary perspective view showing the fitting in position between co-operating components of a drawer;

Fig. 3 is a fragmentary perspective view of a drawer runner fitted with a retaining member for use in association with the stop shown in Figs. 1 and 2;

Fig. 4 is an end view of an alternative form of runner to which the retaining member of Fig. 3 may be secured;

Fig. 5 is a fragmentary horizontal cross-section through a drawer and runner assembly fitted with a stop member and a retaining member of the kind shown in Figs. 1 to 3;

Fig. 6 is a perspective view showing another fitting in the form of a drawer stop member in position between co-operating components;

Fig. 7 is an exploded perspective view of a retaining member for use in association with the stop member shown in Fig. 6;

Fig. 8 is a fragmentary perspective view of a drawer construction incorporating the stop member and retaining member shown in Figs. 6 and 7.

Fig. 9 is a perspective view of a further form of fitting; and

Fig. 10 is a fragmentary perspective view showing the fitting according to Fig. 9 in position between co-operating components.

Referring to Figs. 1 and 2, there is shown a fitting comprising an end stop for a drawer, the fitting having a body portion 10 and a stop portion 11 projecting at right angles

to the body portion. The fitting also includes a pair of interned locating portions 12A, 12B disposed at right angles to both the body portion and the stop portion, and is formed by cutting and pressing from thin metal having a thickness of the order of 10 thousandths of an inch (10 thou).

The fitting is designed to be used as a stop member for a drawer and is clamped between co-operating components of the drawer. As shown in Fig. 2, the drawer comprises back and side panels 15 and 16 in the form of hollow plastic extrusions interconnected by upper and lower corner pieces 17 each comprising an upright post 18 having projections or spigots (not shown) extending therefrom at right angles to one another and forming a tight push fit in the open ends of the associated wall panels. The spigots may be retained in position by use of cement or by projecting detents (not shown) on the spigots engaging in holes formed in the outer or inner faces of the wall panels adjacent their ends. Each wall panel comprises upper and lower hollow cavities 19A, 19B interconnected by a web 20 defining a channel or track 21, the tracks in the opposite side wall panels enabling the drawer to be engaged with runners mounted in the cabinet or other structure in which the drawer is to be located in use. Generally drawers constructed in this manner have side and back walls formed from extruded panels interconnected by corner pieces of the kind shown in the drawings, and a separate front or facia panel attached to the forward ends of the side walls by further connecting pieces having flat faces adapted to be screwed to the facia panel and projecting spigots engageable in the forward ends of the side wall panels and retained in one of the manners referred to above. The wall panels also have inwardly opening slots (not shown) adjacent their lower ends for reception of a drawer bottom.

In order to locate the fitting in position the locating portions 12A, 12B are engaged in the respective upper and lower cavities 19A, 19B of the rear wall panel, following which the corner pieces 17 are engaged in the end of the panel. The stop member is thus trapped in position between the corner pieces and the panel end firmly secured in place. The stop portion 11 projects across the channel 21 formed in the side wall panel 16 between the upper and lower hollow portions, thereby forming a stop for engagement with a suitable retaining member attached to a fixed part of the drawer cabinet. A similar stop member is fitted at the opposite side of the drawer.

Fig. 3 of the drawings shows one form of retaining member for use in association with the stop member described with reference to Figs. 1 and 2. The retaining member 22 includes a mounting portion 22A provided with a hole 22B by means of which the retaining member may be secured in a suitable position adjacent the forward end of a drawer runner 23. An inclined resilient portion 22C of the retaining member connects the mounting portion 22A to an inturned lip 22D forming an abutment portion for engagement with the abutment portion 11 of the stop member on the drawer. The construction of the retaining member is such that when the drawer is first pushed into position in the cabinet the portion 22C of the retaining member flexes into the position shown in broken lines at 22E in Fig. 5 to allow the stop member to pass the retaining member whereupon the latter springs back to the position shown in full lines in Fig. 5 and engages the abutment portion 11 of the stop member in the event that the drawer is subsequently drawn out to the fullest extent desired.

The retaining member may also be utilised in association with conventional hardwood runners of the kind shown at 24 in Fig. 4 by forming a groove or channel 24A in the inner face of the runner for accommodation of the retaining member.

Fig. 6 of the drawing shows a further form of component according to the invention in the form of a modified drawer stop. In this case the component comprises a locating portion 25 and a stop portion 26 disposed at right angles to one another. The component is again formed by bending from relatively thin metal having a thickness of the order of 10 thou. In use the stop member is trapped between components of a drawer constructed in a similar manner to that described with reference to Figs. 1 and 2. In the arrangement illustrated, the stop member is trapped between the upper edge of the upper cavity 19A in the side wall panel 16 and the associated corner piece 17, though it could be located in any desired position, for example, so as to project from the bottom or to the side of the drawer or to extend into the channel 21 in the side wall panel 16.

The stop member is adapted for engagement with a modified form of retaining member shown in Figs. 7 and 8 and comprising a mounting bracket 27 provided with holes 28 enabling it to be screwed or otherwise secured in a suitable position in the drawer cabinet, and having a pair of spaced lugs 29 provided with vertically aligned holes 30 adapted to receive a pin 31 which also passes through a hole 32 in a latch member 33 so as to mount same in a pivotal manner between the lugs 29. A spring 34 is engaged around the pin 31 and acts between the bracket 27 and the latch member 33 to urge the latter into an operative position shown in full lines in Fig. 8 of the drawings where it projects over the upper edge of the

drawer side for engagement with the abutment portion 25 of the stop member.

When the drawer is inserted into the cabinet the latch member swings into the position shown in broken lines at 33A in Fig. 8 to allow the stop member to pass, whereupon the latch member springs outwardly into its operative position and prevents subsequent withdrawal of the drawer by engagement with the stop member. It will be appreciated that a similar stop member and latch member will be provided at the opposite side of the drawer for operation in a similar manner.

Figs. 9 and 10 show a further form of fitting comprising a retaining member adapted for fitting to a drawer so as to be engageable by a locking pin serving to retain the drawer against opening, the locking pin being movable between locking and released positions. The retaining member 35 is formed by pressing and stamping from thin metal and comprises a body member 35A provided with an abutment portion 35B and a locating portion 35C which is bent back upon and extends parallel to part of the body member 35A. In use the device is engaged over the upper wall of the lower hollow section 19B of the side wall panel 16 with the locating portion 35C disposed within the hollow section and the body portion 35A seated on the lower face of the channel 21 in the drawer side. The retaining member is secured in place by insertion of a facie moulding 36 which is screwed to the drawer front and has projecting spigots which are a tight push fit in the openings in the forward end of the drawer panel.

The retaining member is so positioned that in use it is disposed clear of the drawer runner so as to not to interfere with sliding movement of the drawer, but may be engaged by the stop member referred to previously when the drawer is closed, thereby preventing opening of the drawer until the locking mechanism is released. The retaining member could of course be trapped between the facie moulding and the drawer side panel at different positions depending on requirements.

The arrangements described enable attachments of various kinds to be fitted to drawers in a secure and simple manner without requiring separate screwing operations and while still preserving a neat appearance. The simple extruded construction of the drawer panels may be retained and it is not necessary to carry out additional forming punching or like operations subsequent to extrusion. Moreover the components of the stop assemblies are of simple and cheap construction, particularly in the arrangement shown in Figs. 1 to 3 where the stop member and retaining member comprise simple metal stampings.

In the case of the drawer stop arrangements described, if it is desired to remove the drawer completely from the cabinet the retaining members may be resiliently biased into their out-of-use positions by insertion of a suitable tool and will automatically spring into their operative positions following re-insertion of the drawer.

Various modifications may be made without departing from the invention and while in most instances it is envisaged that the locating portions of the fittings will be formed from relatively thin metal having a thickness not in excess of 15 thou., locating portions of greater thickness and of different material could be utilised by providing recesses in one or both of the components to accommodate the locating portion. Moreover the fitting itself may be formed from a variety of different materials irrespective of the construction of the locating portion.

In one possible modification, retaining members of the kind shown in Fig. 3 may be replaced by a section cut from the drawer runner itself and bent outwardly to form a resilient projection. This is especially suited to runners made from plastics materials where an integral retaining member of this kind could be formed immediately following extrusion of the runner and before the plastics material had hardened.

WHAT WE CLAIM IS:—

1. A drawer in which at least the back and side wall panels have openings in their ends and are connected to one another and to the remaining wall panel by respective connecting pieces having projections engaged in said openings and a fitting located with respect to one of said openings in one of said wall panels prior to assembly of the drawer and retained against removal by the engagement of one of said projections in an associated opening in one of said wall panels when the drawer is assembled.

2. A drawer according to claim 1 wherein said fitting incorporates a portion which is trapped between said projection and the associated wall panel.

3. A drawer according to claim 2 wherein the trapped portion of the fitting is of thin metal construction.

4. A drawer according to claim 2 wherein the trapped portion of the fitting has a thickness of not more than 15 thou.

5. A drawer according to claim 2 wherein a recess is formed in said projection and/or in the associated wall panel to accommodate the trapped portion of said fitting.

6. A drawer according to any of claims 2 to 5 in which said fitting comprises a stop member having an abutment portion which projects from the drawer for engagement with a retaining member mounted in a cabinet in which the drawer is supported in use.

7. A drawer according to claim 6 wherein

those wall panels forming the sides of the drawer are provided with runner tracks for engagement with runners on which the drawer is mounted in use, said stop member comprising a stamping formed from thin metal and arranged such that the abutment portion thereof projects into the rear end region of one of said tracks for engagement with a retaining member secured to the associated drawer runner, whereby to prevent complete removal of the drawer from said cabinet.

8. A drawer according to claim 6 wherein the abutment portion of said stop member projects upwardly or downwardly from the rear end region of the drawer for engagement with a retaining member mounted in said cabinet above or below the drawer to prevent complete removal of the drawer from the cabinet.

9. A cabinet incorporating a drawer according to any of claims 6 to 8 wherein said retaining member comprises a mounting portion mounted on a fixed part of the cabinet and an abutment portion adapted for engagement with the abutment portion of said stop member, spring means being integrated between the mounting and abutment portions of the retaining member whereby to urge the abutment portion into an operative position in which it engages the top member after opening of the drawer to a predetermined extent, thereby preventing removal of the drawer from the cabinet, the arrangement being such that on inserting the drawer into the cabinet the abutment portion of the retaining member is deflected to allow entry of the drawer and then springs outwardly into its operative position.

10. A cabinet incorporating a drawer according to claim 6 wherein those wall panels forming the sides of the drawer are provided with runner tracks for engagement with cabinet mounted runners on which the drawer is mounted in use, said stop member being mounted at the forward end of one of said tracks so as to project into the track, and said retaining member being moveably mounted to the cabinet for movement between a locking position in which the retaining member engages said stop member and prevents opening of the drawer and a release position in which the retaining member is disengaged from said stop member enabling the drawer to be opened.

11. A drawer substantially as hereinbefore described with reference to Figs. 1 to 3 and Fig. 5 of the accompanying drawings.

12. A drawer substantially as hereinbefore described with reference to Figs. 6 to 8 of the accompanying drawings.

13. A drawer substantially as hereinbefore described with reference to Figs. 9 to 10 of the accompanying drawings.

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Printed for Her Majesty's Stationery Office by Burgess & Son (Abingdon), Ltd.—1981.
Published at The Patent Office, 25 Southampton Buildings, London, WC2A 1AY,
from which copies may be obtained.

1589512 COMPLETE SPECIFICATION

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Sheet 1

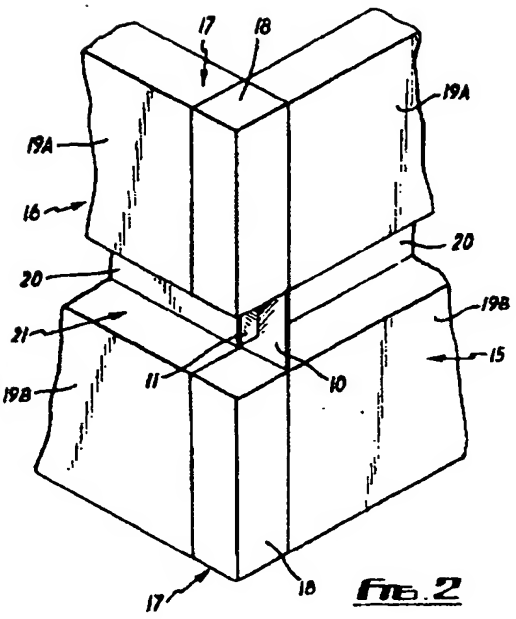

FIG. 2

FIG. 1

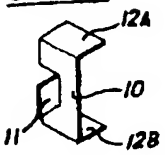

FIG. 3

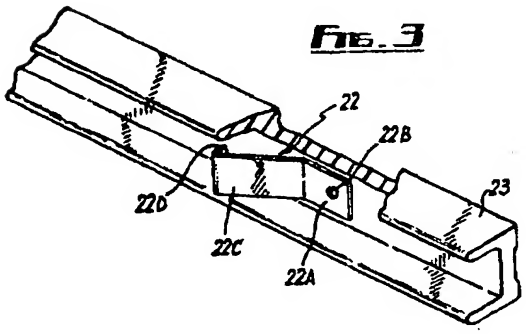

FIG. 4

1589512 COMPLETE SPECIFICATION

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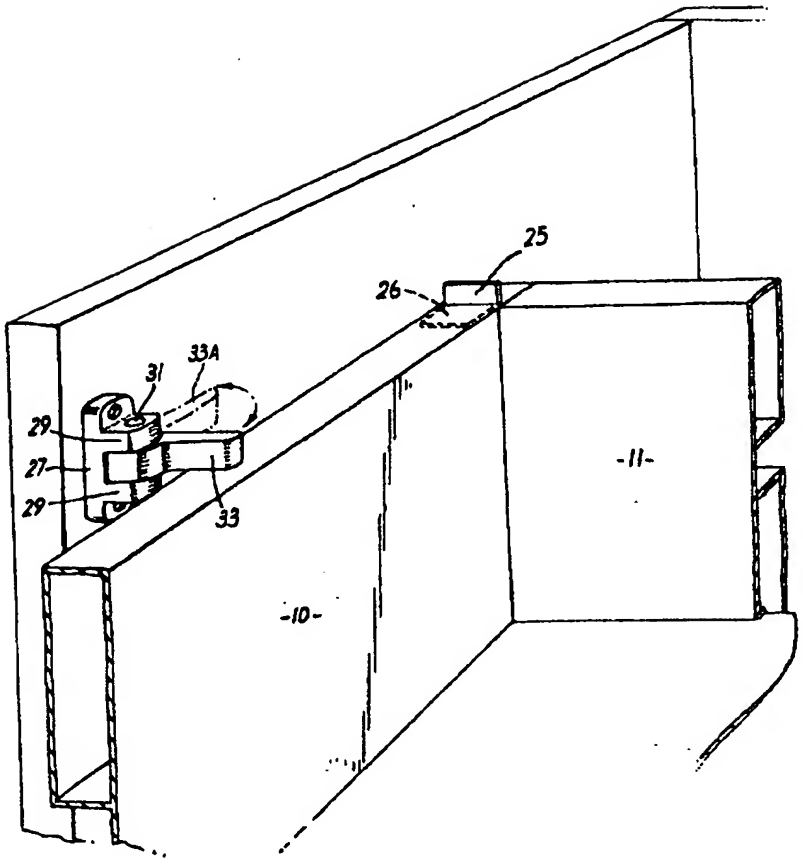

FIG. 8

1589512 COMPLETE SPECIFICATION

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Sheet 4

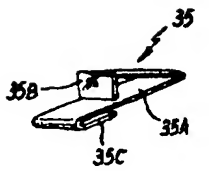

FIG. 9

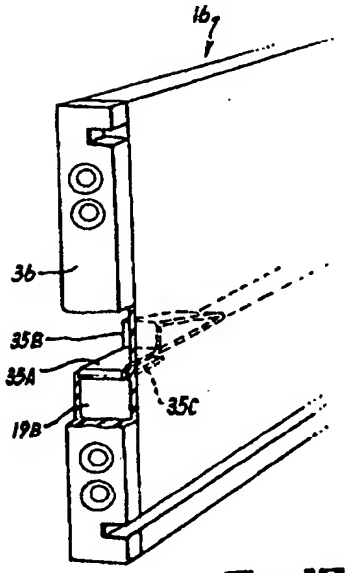

FIG. 10